

REMARKS

In the November 28, 2006 Office Action, all of the claims stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the November 28, 2006 Office Action, Applicants have amended claims 3, 5, 7, 10 and 12-17 and added new claims 18-20, as indicated above. Thus, claims 1-20 are now pending, with claims 1, 5 and 19 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Rejections - 35 U.S.C. § 102

In paragraphs 2 and 3 of the Office Action, claims 1-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,300,411 (Segawa). In response, Applicants respectfully traverse this rejection as applied to claims 1-4. Also, Applicants respectfully traverse this rejection as applied to claims 5-17, especially in view of the clarifying amendments to independent claim 5.

Claims 1-4

Independent claim 1 requires, inter alia, a crank shaft including first and second portions with the second portion being positioned on a right side of the first portion and having a larger diameter than the first portion; and a right crank including a crank arm part formed integrally with a sprocket mounting part having a plurality of arm parts configured and arranged to support at least one sprocket, the right crank being crimp-fastened to the crank shaft by installing the second portion of the crank shaft into the engagement bore such that a gap is formed between the first portion and the engagement bore, and pressing the periphery of the engagement bore from the second surface toward the first surface in the axial direction of the crank shaft such that a pressed portion bulges radially inward and an annular space is formed between the crank shaft and the engagement bore. Clearly this arrangement is *not* disclosed or suggested in the Segawa patent or any other prior art of record, as explained in more detail below.

In particular, the Segawa patent does not disclose or suggest a right crank crimp fastened onto a crank shaft whatsoever. Specifically, this feature is structurally recited in the claims. Thus, the Segawa patent fails to disclose all of the limitations of independent claim 1.

The Office Action asserts that the method of forming the device with regard to "crimp fastened" is a method of assembly, and is not germane to patentability of the device itself. Applicants respectfully disagree. It is well settled in U.S. patent law that all limitations in a claim must be considered (i.e. including process steps), especially where the manufacturing process step(s) would be expected to impart distinctive structural characteristics to the final product. See M.P.E.P. 2113. In this case, the phrase "crimp fastening" has a recognizable structure in independent claim 1, and thus, cannot be ignored. In other words, a "crimp-fastened" structure can be readily determined upon inspecting a crank. Moreover, the "crimp fastening" contributes to the unique structural arrangement of the right crank as set forth in independent claim 1, which is not disclosed in the prior art.

Additionally, even if the limitations of claim 1 relating to the so-called method of assembly (i.e. process limitations) are completely ignored, independent claim 1 sets forth structures which are not disclosed or suggested in the Segawa patent. Specifically, the Segawa patent fails to disclose or suggest a right crank including a crank arm part formed integrally with a sprocket mounting part having a plurality of arm parts configured and arranged to support at least one sprocket. Furthermore, the Segawa patent fails to disclose or suggest a gap formed between the first portion of the crank axle and the engagement bore of the right crank and a pressed portion that bulges radially inward such that an annular space is formed between the crank shaft and the engagement bore.

It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose each and every element of the claim within the reference. Therefore, Applicants respectfully submit that claim 1 is not anticipated by the prior art of record. Accordingly, based upon the above, withdrawal of this rejection is respectfully requested.

Applicants believe that the dependent claims 2-4 are also allowable over the prior art of record in that they depend from independent claim 1, and therefore are allowable for the reasons stated above. Also, the dependent claims 2-4 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not anticipate the independent claim 1, neither does the prior art anticipate the dependent claims 2-4.

Claims 5-17

Independent claim 5 as now amended requires a crank shaft including first and second portions with the second portion being positioned closely adjacent to the first portion and having a larger diameter than the first portion; and a crank having a pedal mounting part provided on a tip end thereof and an engagement bore formed in a base end thereof, the engagement bore having the second portion of the crank shaft received therein with the base end having a deformed pressed portion that is crimp-fastened to the second portion of the crank shaft, the engagement bore having a maximum axial length that is shorter than a maximum diameter of the second portion of the crank shaft. Clearly this arrangement is *not* disclosed or suggested in the Segawa patent or any other prior art of record, as explained in more detail below.

In particular, as mentioned above, the phrase "crimp fastening" has a recognizable structure, and thus, cannot be ignored. In other words, a "crimp-fastened" structure can be readily determined upon inspecting a crank. Moreover, the "crimp fastening" contributes to the unique structural arrangement of the right crank as set forth in independent claim 5, which is not disclosed in the prior art.

Additionally, even if the limitations of claim 5 relating to the so-called method of assembly (i.e. process limitations) are completely ignored, independent claim 1 sets forth structures which are not disclosed or suggested in the Segawa patent. Specifically, the Segawa patent fails to disclose or suggest a *deformed pressed portion*, or a crank having an *engagement bore having a maximum axial length that is shorter than a maximum diameter of the second portion of the crank shaft*, as set forth in independent claim 5.

It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose each and every element of the claim within the reference. Therefore, Applicants respectfully submit that claim 5 is not anticipated by the prior art of record. Accordingly, based upon the above, withdrawal of this rejection is respectfully requested.

Applicants believe that the dependent claims 6-17 are also allowable over the prior art of record in that they depend from independent claim 5, and therefore are allowable for the reasons stated above. Also, the dependent claims 6-17 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does

not anticipate the independent claim 5, neither does the prior art anticipate the dependent claims 6-17.

New Claims

Applicants have added claims 18-20 by the current Amendment.

New claim 18 depends from independent claim 1, and thus, is believed to be allowable for the reasons discussed above with respect to independent claim 1. Also, claim 18 requires an engagement bore that is a blind bore, which is not disclosed or suggested in the prior art in combination with the features set forth in independent claim 1.

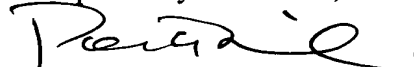
New claim 19 is an independent claim. Applicants believe the prior art fails to disclose or suggest the second portion of the crank shaft being crimp-fastened in the engagement bore by a deformed pressing portion of the sprocket mounting part that bulges radially inward of the larger diameter of the second portion with an annular recess being disposed in the sprocket mounting part radially between the first portion and the engagement bore of the sprocket mounting part, as set forth in new independent claim 19.

New claim 20 depends from independent claim 19, and thus, is believed to be allowable for the reasons discussed above with respect to independent claim 19. Also, claim 20 requires an engagement bore that is a blind bore, which is not disclosed or suggested in the prior art in combination with the features set forth in new independent claim 19.

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In view of the foregoing amendment and comments, Applicants respectfully assert that claims 1-20 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,



Patrick A. Hilsmier
Reg. No. 46,034

GLOBAL IP COUNSELORS, LLP
1233 Twentieth Street, NW, Suite 700
Washington, DC 20036
(202)-293-0444
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